FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-5344
TOWN OF FARMINGTON

SUMMARY

The Town of Farmington is located on the Washington-Idaho border about 45 miles southeast of Spokane and 25 miles northeast of Pullman in Whitman County. The town is located in the Pine Creek bottomland, and the 100 year flood plain has been established as part of the National Flood Insurance Program. A north and south fork of Pine Creek flow through the town east to west and join together a few hundred feet west of the western town limit. The entire area is underlain with basalt rock and shallow aquifers above the basalt are common.

The current population of Farmington is approximately 145. There is a downward migration trend that is common for many small towns in eastern Washington and the current prospects for growth are not optimistic. Currently, a substantial number of residents are retired and unemployment levels in the town are high. Farmington has one of the lowest per capita income levels in Whitman County. There are no commercial or industrial activities.

The town's sewerage system and wastewater treatment system were constructed in 1984 with state and federal grant assistance. The facility was constructed as an earthen lined 2 cell non-overflow lagoon. Standards, at the time, allowed a 0.1 inch per day seepage rate from such lagoon systems. The primary lagoon was designed and constructed with a short, interior dike which submerges when that lagoon reaches its 5 feet operational height. This system replaced the inadequate on-site individual septic tanks used throughout the town.

An under drain system was installed beneath the lagoons, primarily to keep groundwater from intruding into the lagoons, but is no longer functioning. The west lagoon is leaking at the southwest corner and the discharge from that discharge runs into Pine Creek. Infiltration and inflow through unlined manholes is severe and is causing the plant flows to well exceed design criteria.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. **ST-5344** . The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments

GENERAL INFORMATION	
Applicant	Town of Farmington
Facility Name and Address	Town of Farmington POTW P.O. Box 65 Farmington, WA 99128
Type of Treatment System:	POTW; earthen lined lagoon followed by vegetated, evaporation/infiltration lagoon.
Discharge Location	Latitude: 47° 05' 13" N Longitude: 117° 02' 31" W.
Legal Description of Application Area	East border of Town south of the South Fork of Pine Creek. SE¼NE¼ of Section 6, T.18 N., R. 46 E.W.M.
Contact at Facility	Name: The Honorable Royce Johnson Telephone #: (509) 287-2500
Responsible Official	Name: The Honorable Royce Johnson Title: Mayor Address: P.O. Box 65, Farmington, WA 99128 Telephone #: (509) 287-2500

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

HISTORY

The town's sewerage system and wastewater treatment system were constructed in 1984 with state and federal grant assistance. The facility was constructed as an earthen lined 2 cell non-overflow lagoon. Standards, at the time, allowed a 0.1 inch per day seepage rate from such lagoon systems. The primary lagoon was designed and constructed with a short, interior dike which submerges when that lagoon reaches its 5 feet operational height. This system replaced the inadequate on-site individual septic tanks used throughout the town.

An under drain system was installed beneath the lagoons, primarily to keep groundwater from intruding into the lagoons. At present, the under drain is not functional.

COLLECTION SYSTEM STATUS

The collection system consists of approximately 18,000 lineal feet of 8" and 10" gravity sewer, 1,400 feet of 4" pressure sewer and one pump station which lifts the sewage to the treatment lagoon. Sewage enters the north portion of lagoon #2 after flowing through an inlet structure. It then flows from the south portion of lagoon #2, through a level control structure, into evaporation/infiltration lagoon #1. There are 49 manholes in the collection system, all unlined, and most which allow large amounts of infiltration into the system.

TREATMENT PROCESSES

The treatment system was designed for a population of 225 and is now operated as a treatment lagoon followed by a wetland type evaporation/infiltration lagoon. The wetland lagoon is overgrown with vegetation and water is allowed to pond then infiltrate into the ground. The surface acreage of this lagoon is a little less than 1.5 acres.

DISTRIBUTION SYSTEM (INFILTRATION BASIN)

Both lagoons are 7 feet deep, from the top of the dike to the bottom of the lagoon. The treatment lagoon, lagoon #2, has a 5 feet operational level and has a surface area of 2.0 acres.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill.

GROUND WATER

PERMIT STATUS

The previous permit for this facility was issued on January 22, 1996 and has been on a temporary status since July 10, 2001.

An application for permit renewal was submitted to the Department on March 23, 2001 and accepted by the Department on July 10, 2001.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on March 9, 2005.

During the history of the previous permit, the Permittee has continued to submit monthly DMR reports; however has not submitted any quarterly or semi-annual monitoring results since 1997. There is no certified operator in charge of the wastewater plant as required by WAC 173-230.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application. The proposed wastewater discharge prior to infiltration or land application is characterized for the following parameters:

Table 1: Wastewater Characterization

Parameter	Concentration
BOD	31 – 63 mg/L
TKN	14.4 mg/L
Nitrate (N)	ND
Nitrite (N)	ND
pH	7.06 – 7.48 s.u.
TSS	31 mg/L
Conductivity	692 µmhos

SEPA COMPLIANCE

A SEPA checklist was prepared for Farmington's general sewer plan on December 19, 2003.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water*

Reclamation and Reuse Standards, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the wastewater applied to the drainfield that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The Department has reviewed existing records and is unable to determine if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses.

Pollutant concentrations in the proposed discharge exceed ground water quality criteria with technology-based controls which the Department has determined to be AKART. A limit based on ground water criteria is established and applied at the end of treatment.

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED MARCH 20, 1990

Table 3: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits
Flow	18,000 gpd	18,000 gpd

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2 and S3. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the facilities plan prepared by E and H Engineering and are as follows:

Annual Average Flow:	18,000 gpd
Maximum Daily Flow:	90,000 gpd
BOD influent loading:	45 lbs/day

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503 and by Ecology under Chapter 70.95J RCW and Chapter 173-208 WAC. The disposal of other solid waste is under the jurisdiction of the local health district.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health, 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html)

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State University, November, 1981. Laboratory Procedures - Soil Testing Laboratory. 38 pp.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on (date) and (date) in (name of publication) to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

This permit was written by Cynthia Wall.

APPENDIX B--GLOSSARY

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or

industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

APPENDIX C--TECHNICAL CALCULATIONS

APPENDIX D--RESPONSE TO COMMENTS